

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. By this Amendment, Applicant has canceled claims 19 and 20.¹ Thus, upon entry of this Amendment, claims 1 and 3-18 are pending in the application. Claims 9-13 are allowed. Applicant respectfully submits that the pending claims define patentable subject matter.

Claims 1 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Davies et al. (USP 5,345,222; hereafter “Davies”). Claims 3, 4, 6, 7 and 14-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Davies. Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Davies in view of Hadden et al. (U.S. Patent No. 5,223,851; hereafter “Hadden”). Applicant respectfully traverses the prior art rejections.

Independent claim 1 recites:

a converger, including a conductor which converges a magnetic flux of an electromagnetic wave, the converger having a through hole, into which the magnetic flux is converged, at a center portion of the conductor, and a cutout extending from a part of the through hole to an outer periphery of the conductor; and

a converter, which converts the converged magnetic flux into voltage.

Independent claim 14 recites:

a converger, including a conductor which converges a magnetic flux of an electromagnetic wave; and

¹ Applicant respectfully submits that the claim amendments should be entered for purposes of appeal because they place the application in better form for appeal by materially reducing or simplifying the issues for appeal.

a converter, which converts the converged magnetic flux into voltage, the converter being operable independently from a ground potential.

In the Amendment filed February 23, 2004, Applicant argued that the claimed invention would not have been anticipated by or rendered obvious in view of Davies because the conductive plate 61 of Davies does not converge the magnetic field as claimed. In particular, although the conductive plate 61 is formed with a through hole and a cutout, the conductive plate 61 is provided to reduce the magnetic field at the point directly behind the coil 63 (see Col. 3, Lines 62-65). Further, since the size of the through hole and the outer peripheral dimension of the conductive plate 61 are similar to each other in size, the path length of the eddy current becomes substantially the same as the size of the coil 63. As a result, the magnetic field will not be converged as in the present invention.

In response the arguments for patentability, the Examiner (page 4) contends that “the plate 61 of Davies et al does ‘converge’ the magnetic field by virtue of its action thereupon. Since the sizes of the coil 63 and plate 61 are similar, the convergence of the magnetic field is assured.” That is, the Examiner appears to allege that the configuration disclosed in Davies has a function for converging a magnetic flux because (1) an eddy current is generated in the conductive plate 61, and (2) the sizes of the coil 63 and the plate 61 are similar.

With regard to item (1), there is difference between magnetic flux passing through a hole formed in the plate 61 and the passing magnetic flux being converged. Davies provides a method for reducing the interrogation magnetic field in the area outside the detection zone while increasing the field inside the detection zone (column 3, lines 24-27). That is, Davies prevents the magnetic field from leaking to the side of the conductive plate 62. The magnetic field which

would normally pass into objects behind the coil 63 is diverted, and the plate 62 reduces the rearward residual weaker field, not deflected by the plate 61 (column 4, lines 1-10). If the plate 61 is merely formed with a hole (i.e., not having a slit), the magnetic field is certainly canceled by eddy current opposition generated in the plate 61. However, it is contrary to the above object to increase the magnetic field inside the detection zone. It is the reason why the slit is formed in the plate 61 and why the plate 62 is provided. In other words, a part of the magnetic field is allowed to pass through the hole of the plate 61 to maintain the forward magnetic field and the residual field is reduced at the plate 62.

Although the eddy current is generated at the plate 61 if there is a field passing through the hole of the plate 61, it is not possible to conclude that the field has been converged based on the existence of the eddy current. Moreover, it is apparent from the above explanation that Davies is not intended to converge the magnetic field in view of the purpose of the system. Accordingly, Applicant respectfully submits that it is quite clear that Davies does not teach or suggest the claimed converger of independent claims 1 and 14.

With regard to item (2) (the similar sizes of the coil 63 and the plate 61), Applicant respectfully submits that an apparent difference exists between the invention and Davies is the sizes of the converger (conductive plate) and the converter (coil). The requirements for converging the magnetic flux are described in dependent claims 17 and 18 which recite that: A) an eddy current flowing on the conductive plate has a path length which is at least one wavelength of the electromagnetic wave; and B) the size of the through hole is sufficiently smaller than the wavelength of the electromagnetic wave. From these recitations A and B, it is

possible to lead a fact that the size of the through hole is sufficiently smaller than the pass length of the eddy current. However, Davies does not satisfy this requirement. The Examiner alleges that the magnetic flux is converged because the sizes of the plate 61 and the coil 63 are similar. However, Applicant respectfully submits that the Examiner's allegation in this regard is incorrect. Rather, the magnetic flux is not converged because the sizes of the plate 61 and the coil 63 are similar. Accordingly, Applicant respectfully submits dependent claims 17 and 18 further recite features which are not taught or suggested by Davies.

The electronic article surveillance (EAS) system of Davies is a kHz frequency system (see, e.g., column 2, line 30). It is necessary to provide a conductive plate having a dimension of several tens to hundreds meters to obtain an eddy current having a path length which is at least one wavelength of the electromagnetic wave. It is apparent that such a configuration is impractical. It is also apparent the size of the through hole formed in the plate 61 is not sufficiently smaller than the pass length of the eddy current in this system. Thus, Applicant respectfully submits that the device of Davies both structurally and operationally different from the antenna of the claimed invention.

In view of the above, Applicant respectfully submits that independent claims 1 and 14, as well as dependent claims 3-8 and 15-18, would not have been anticipated by or rendered obvious in view Davies because the cited reference does not teach or suggest all of the features of the claimed invention.

Reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be

AMENDMENT UNDER 37 C.F.R. § 1.116
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best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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